

X(1835)

$$I^G(J^{PC}) = ?^?(?^{-+})$$

OMITTED FROM SUMMARY TABLE

Needs confirmation. Seen by BAI 03F and ABLIKIM 05R in radiative decays of the J/ψ . Evidence for a threshold enhancement in the $p\bar{p}$ mass spectrum was also reported by ABE 02K, AUBERT, B 05L, and WANG 05A in $B^+ \rightarrow p\bar{p}K^+$, WANG 05A in $B^0 \rightarrow p\bar{p}K_S^0$, and ABE 02W in $\bar{B}^0 \rightarrow D^0 p\bar{p}$ decays. Not seen by ATHAR 06 in $\Upsilon(1S) \rightarrow \gamma p\bar{p}$.

X(1835) MASS

| VALUE (MeV) | EVTS | DOCUMENT ID | TECN | COMMENT |
|---|------|----------------------|------|---|
| 1833.7 ± 6.1 ± 2.7 | 264 | ABLIKIM | 05R | BES2 $J/\psi \rightarrow \gamma\pi^+\pi^-\eta'$ |
| ••• We do not use the following data for averages, fits, limits, etc. ••• | | | | |
| 1812 $^{+19}_{-26}$ ±18 | 95 | ¹ ABLIKIM | 06J | BES2 $J/\psi \rightarrow \gamma\omega\phi$ |
| 1831 ± 7 | | ² ABLIKIM | 05R | BES2 $J/\psi \rightarrow \gamma p\bar{p}$ |

¹ Favors $J^{PC} = 0^{++}$ quantum numbers assignment.

² From the fit including final state interaction effects in isospin 0 S -wave according to SIBIRTSEV 05A. Systematic errors not estimated.

X(1835) WIDTH

| VALUE (MeV) | CL% | EVTS | DOCUMENT ID | TECN | COMMENT |
|---|-----|------|----------------------|------|---|
| 67.7 ± 20.3 ± 7.7 | | 264 | ABLIKIM | 05R | BES2 $J/\psi \rightarrow \gamma\pi^+\pi^-\eta'$ |
| ••• We do not use the following data for averages, fits, limits, etc. ••• | | | | | |
| 105 ± 20 ± 28 | | 95 | ³ ABLIKIM | 06J | BES2 $J/\psi \rightarrow \gamma\omega\phi$ |
| < 153 | 90 | | ⁴ ABLIKIM | 05R | BES2 $J/\psi \rightarrow \gamma p\bar{p}$ |

³ Favors $J^{PC} = 0^{++}$ quantum numbers assignment.

⁴ From the fit including final state interaction effects in isospin 0 S -wave according to SIBIRTSEV 05A. Systematic errors not estimated.

X(1835) DECAY MODES

| Mode | Fraction (Γ_i/Γ) |
|------------------------------|--------------------------------|
| Γ_1 $p\bar{p}$ | seen |
| Γ_2 $\pi^+\pi^-\eta'$ | seen |
| Γ_3 $\omega\phi$ | seen |

X(1835) BRANCHING RATIOS

| $\Gamma(p\bar{p})/\Gamma(\pi^+\pi^-\eta')$ | Γ_1/Γ_2 | | |
|---|---------------------|------|---|
| VALUE | DOCUMENT ID | TECN | COMMENT |
| ••• We do not use the following data for averages, fits, limits, etc. ••• | | | |
| 0.333 | ABLIKIM | 05R | BES2 $J/\psi \rightarrow \gamma\pi^+\pi^-\eta'$ |

$\Gamma(\omega\phi)/\Gamma_{\text{total}}$ Γ_3/Γ

| VALUE | DOCUMENT ID | TECN | COMMENT |
|-------|-------------|----------|---------------------------------------|
| seen | ABLIKIM | 06J BES2 | $J/\psi \rightarrow \gamma\omega\phi$ |

X(1835) REFERENCES

| | | | | |
|-----------|-----|----------------|------------------------------|-----------------|
| ABLIKIM | 06J | PRL 96 162002 | M. Ablikim <i>et al.</i> | (BES Collab.) |
| ATHAR | 06 | PR D73 032001 | S.B. Athar <i>et al.</i> | (CLEO Collab.) |
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| ABE | 02K | PRL 88 181803 | K. Abe <i>et al.</i> | (BELLE Collab.) |
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